Housing Needs Assessment – Geospatial Analysis Results

September 8, 2011

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Housing Demand
July 2008-July 2011

City	Units Lost (2008 Flood)	Permits for New Units	Net Difference	Economic Housing Demand (2008-2010)	Net Difference (Total Housing Demand)
Cedar Rapids	1533	1665	-132	1616	1484
Charles City	12	6	6	0	6
Columbus Junction	6	10	-4	6	2
Coralville	36	221	-185	215	30
Iowa City	154	701	-547	789	242
Mason City	50	111	-61	0	-61
Waterloo	52	180	-128	0	-128
Waverly	242	N/A	N/A	0	N/A

Housing Values
July 2008-July 2011

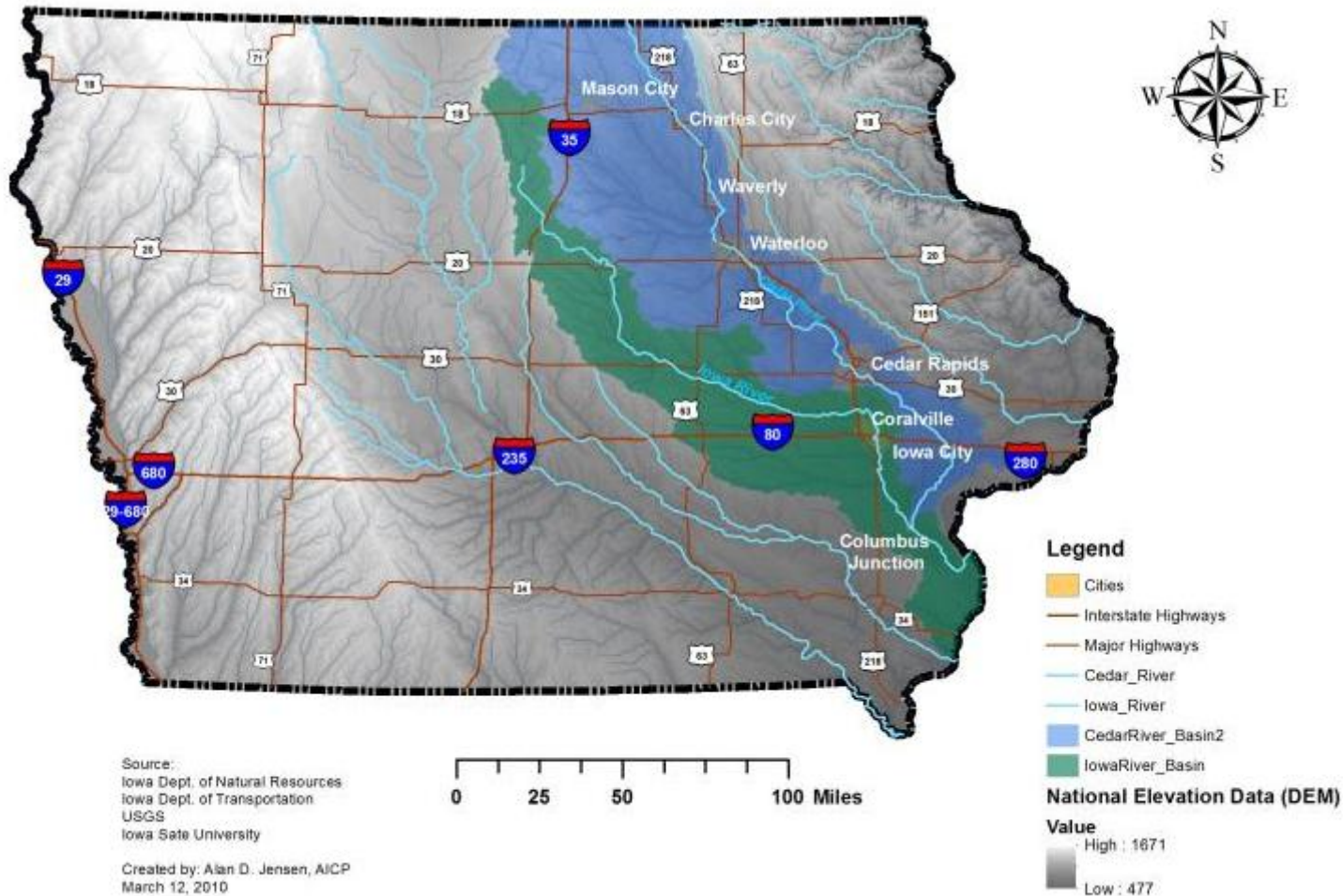| City	Avg. Value Per Unit Lost	Avg. Value Per Unit Built	Net Difference
Cedar Rapids	51,925	82,415	30,491
Charles City	N/A	269,902	N/A
Columbus Junction	33,682	134,364	100,682
Coralville	84,559	210,716	126,156
Iowa City	154,805	190,158	35,353
Mason City	N/A	184,011	N/A
Waterloo	57,061	126,305	69,244
Waverly	N/A	N/A	N/A

How did we get there?

The Question

- What housing was lost as a result of the flood?

- Has the resulting housing need been met?

- $\Sigma HN = (-H_{L1}) + (HS - H_{L2})$

- Where:
  - H_{L1} = Housing losses within the flood extent
  - H_{L2} = Housing losses within the city, outside of the flood extent
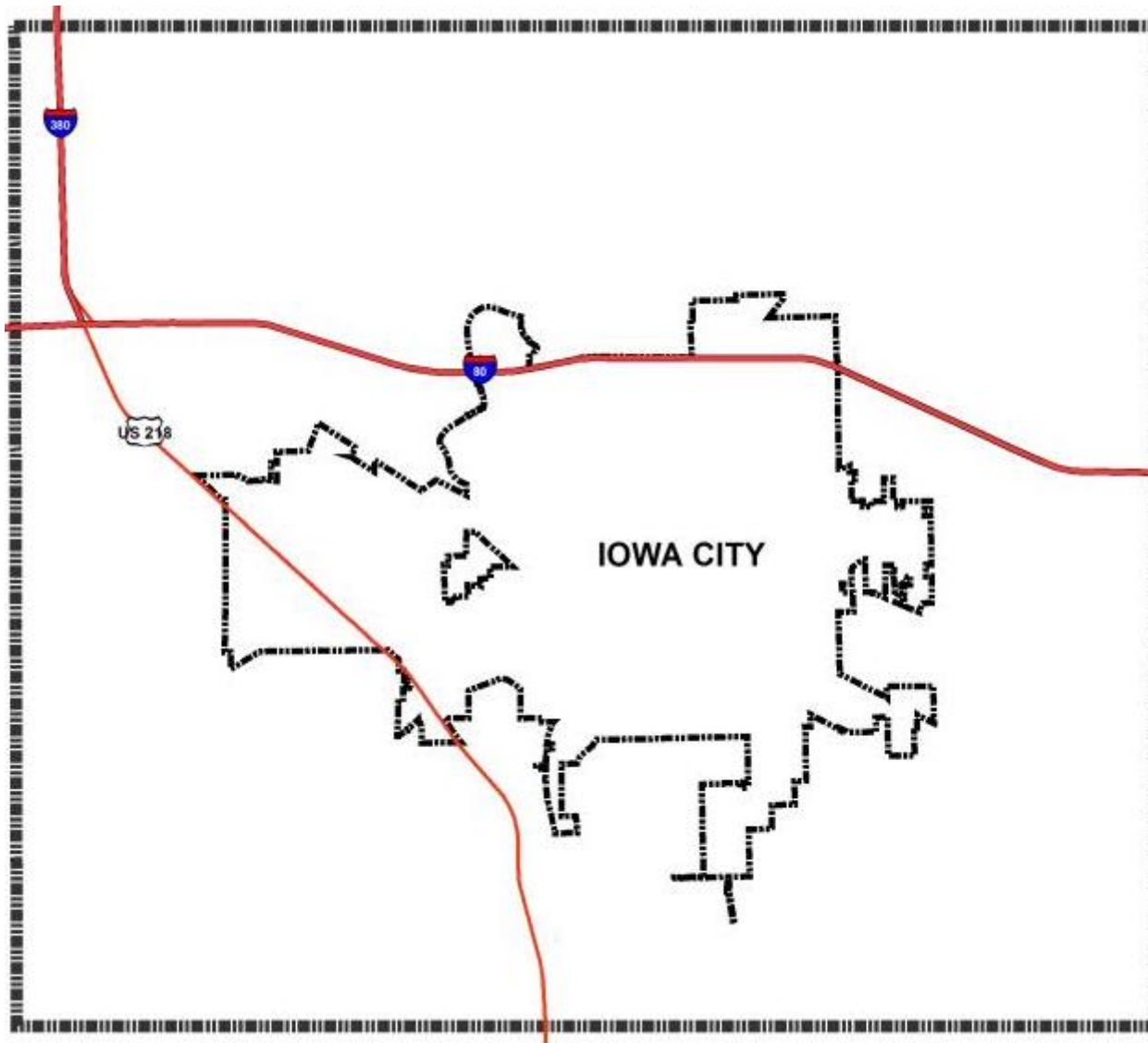 - HS = Housing starts.

Data Collection

- City boundaries

- Rivers

- Roads

- Floodplains/flood extent

- 2008 & 2010 dwelling values by parcel (assessor's data)

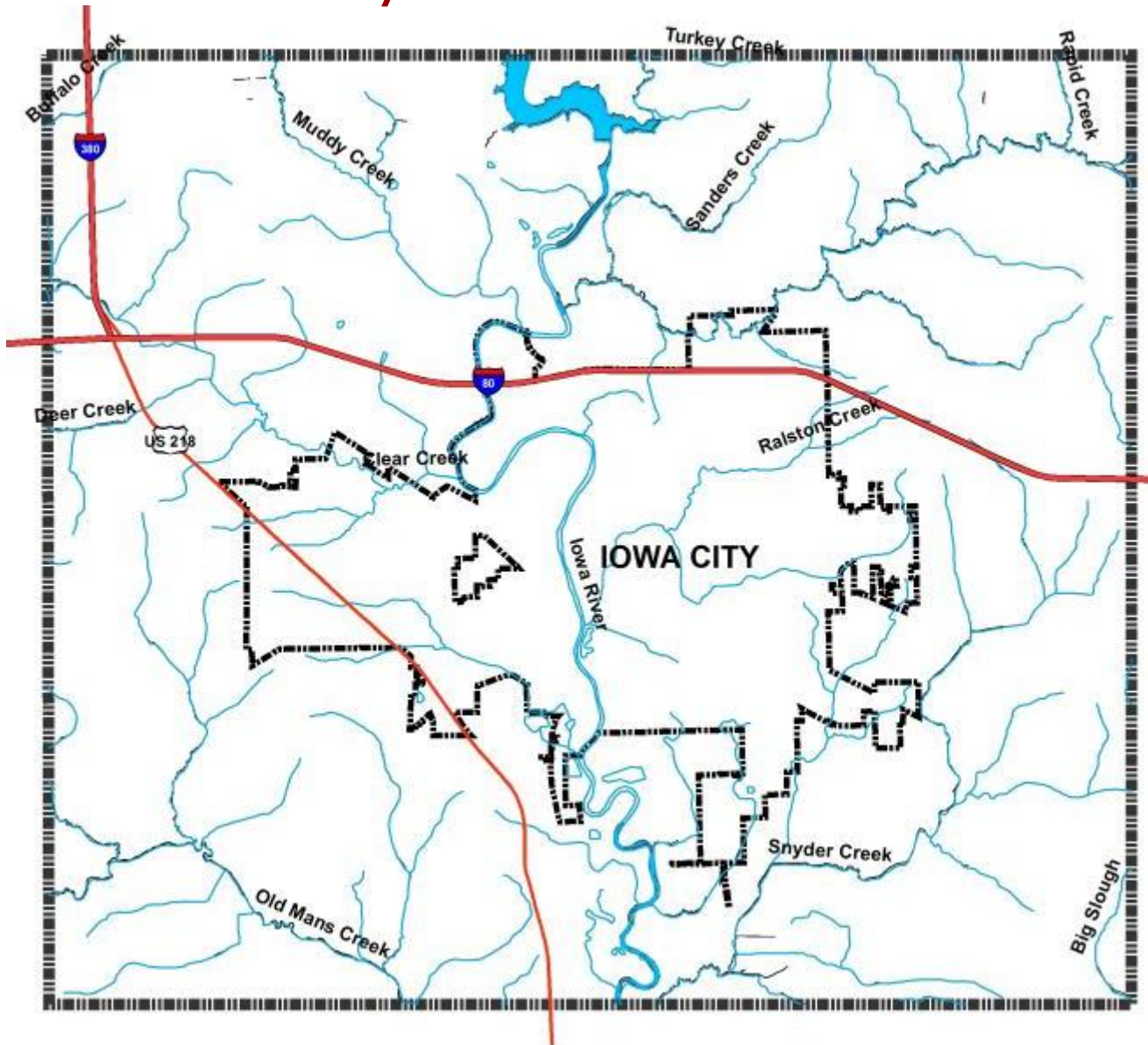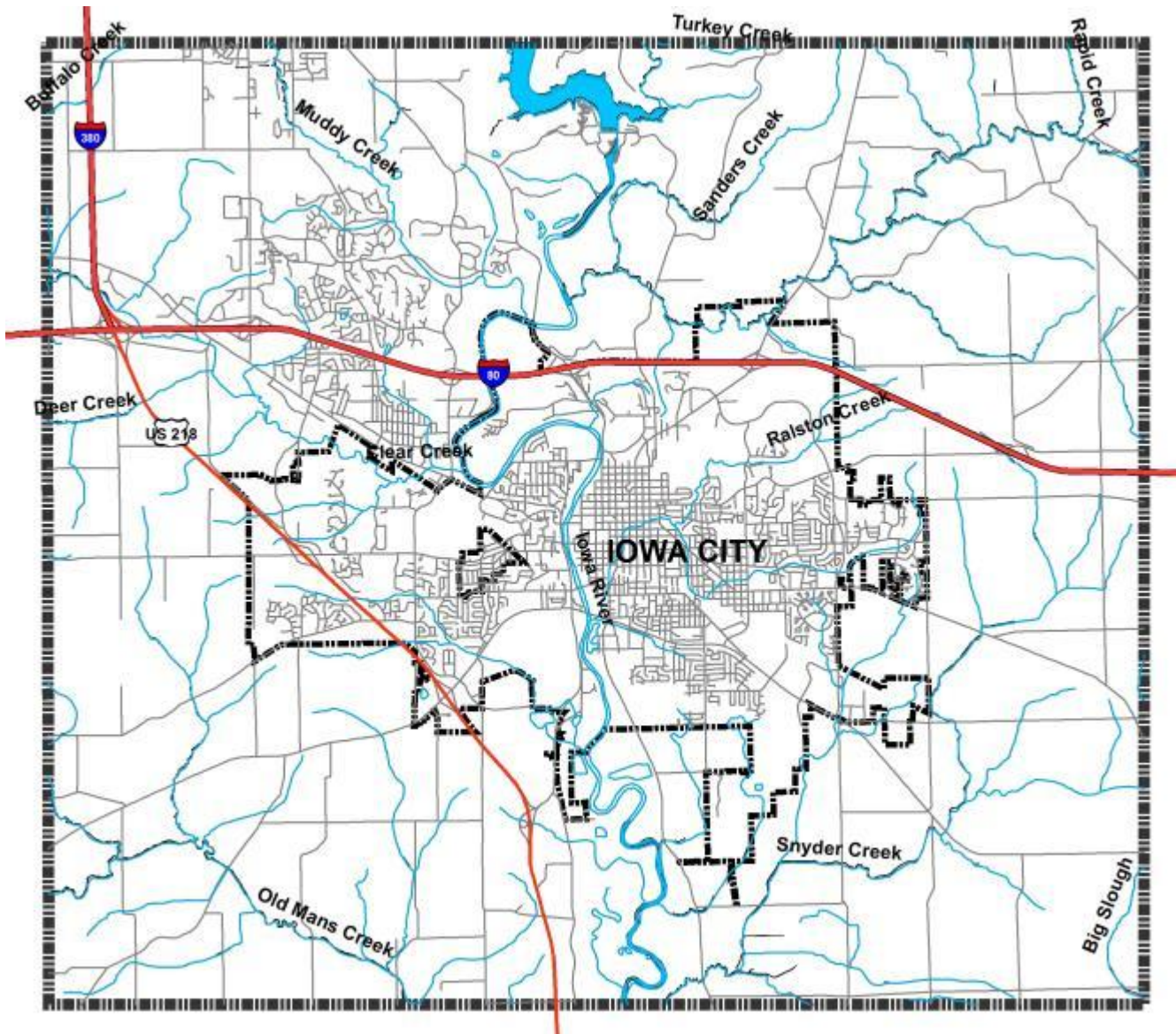- Demolition permits
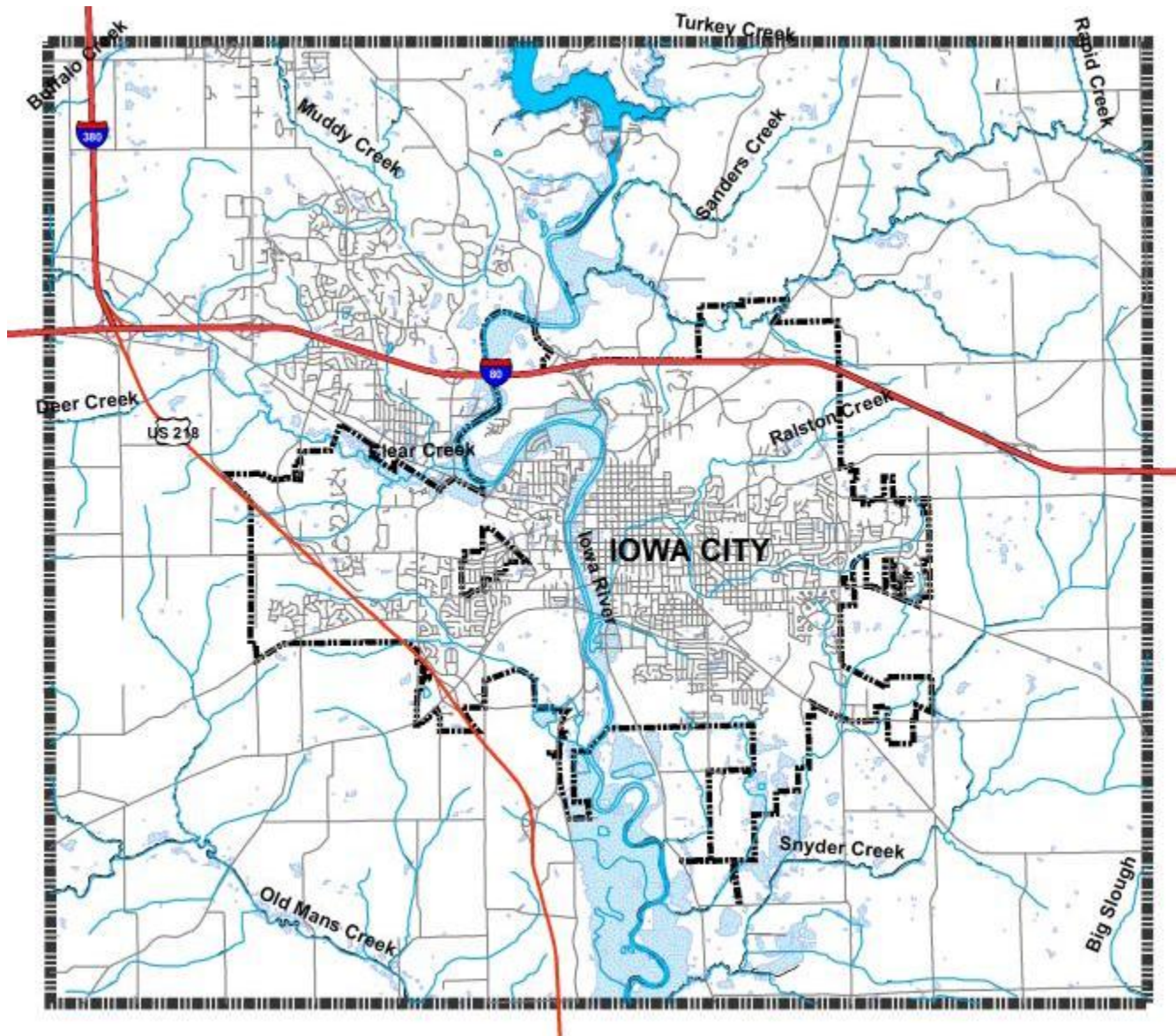
- Building permits

GIS Mapping and Analysis

Source:
Iowa Dept. of Natural Resources
Iowa Dept. of Transportation
USGS
Iowa Sate University

Created by: Alan D. Jensen, AICP
March 12, 2010

0   25   50   100 Miles

Legend

Cities

—— Interstate Highways

—— Major Highways

—— Cedar_River

—— Iowa_River

CedarRiver_Basin2

IowaRiver_Basin

National Elevation Data (DEM)

Value

High : 1671

Low : 477

Iowa City

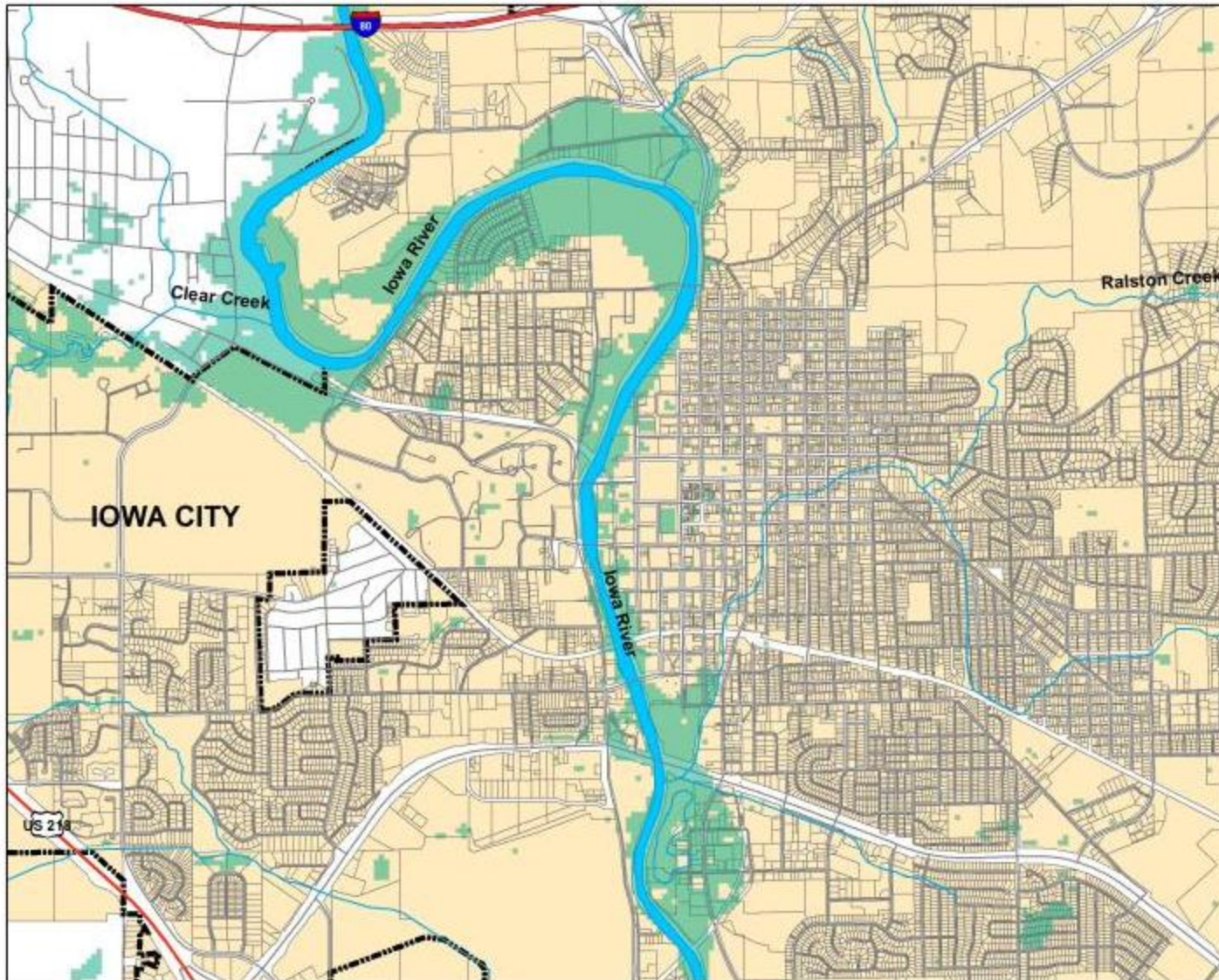# Iowa City: **Streams**

Iowa City: **Roads**

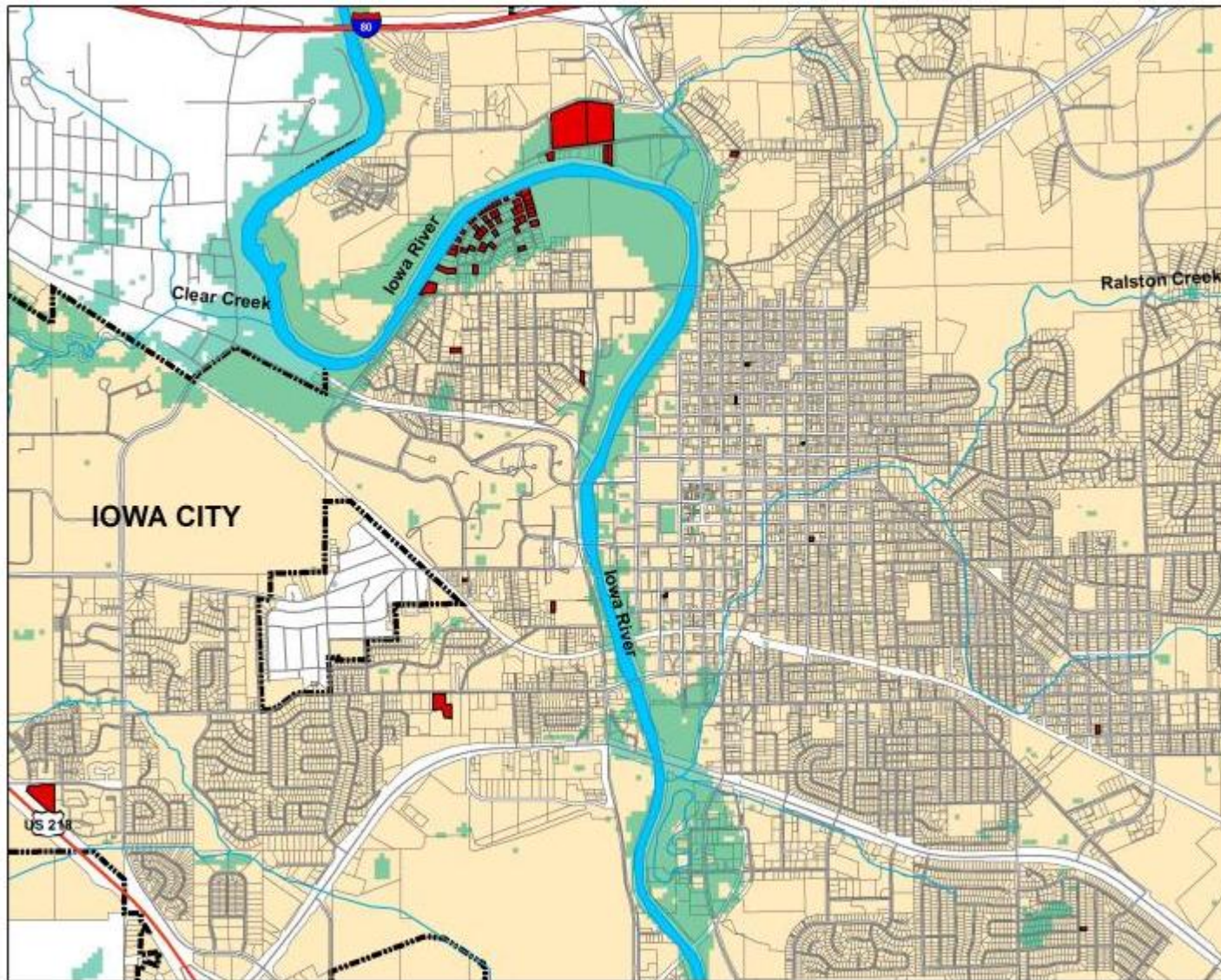# Iowa City: **Flood Extent**

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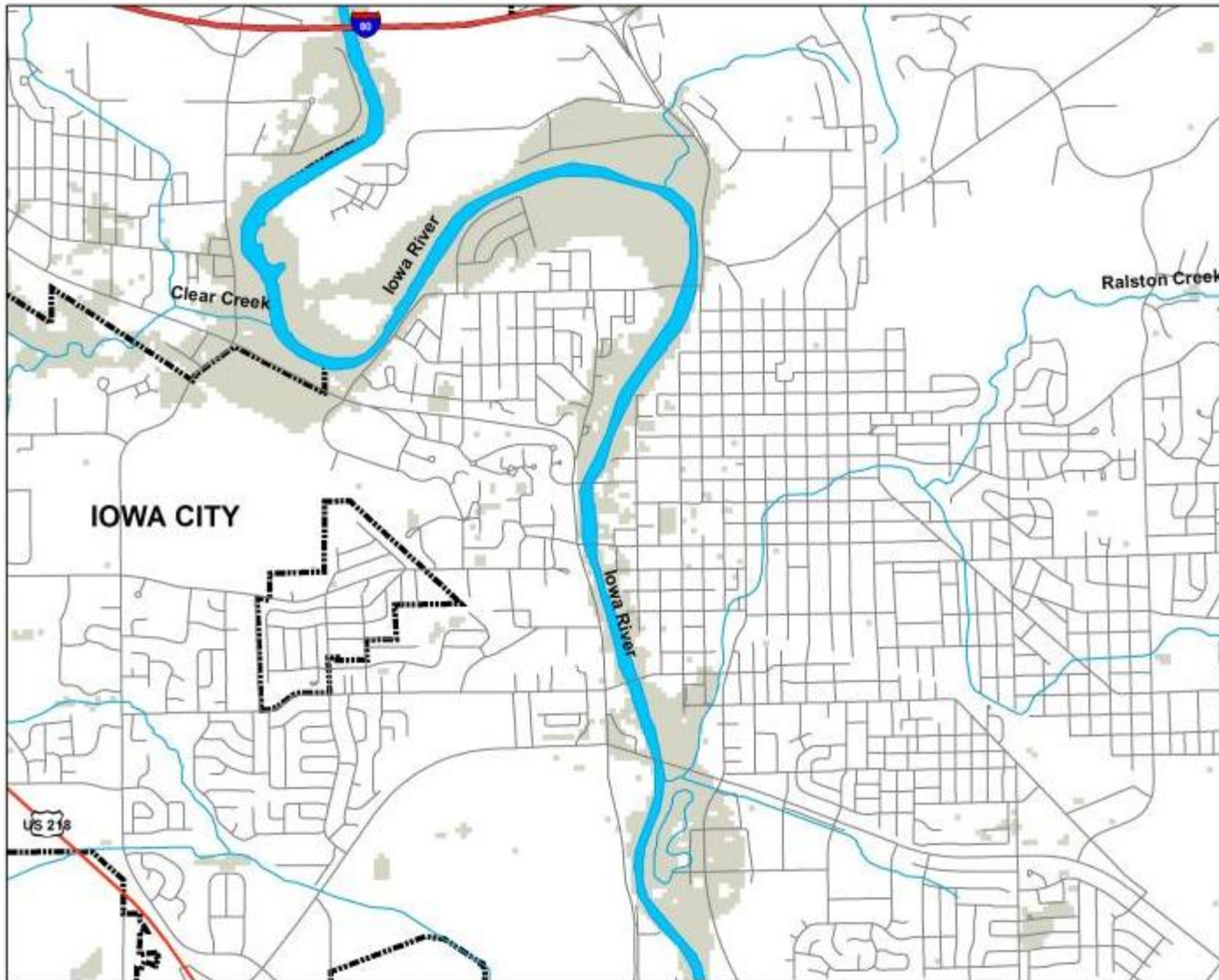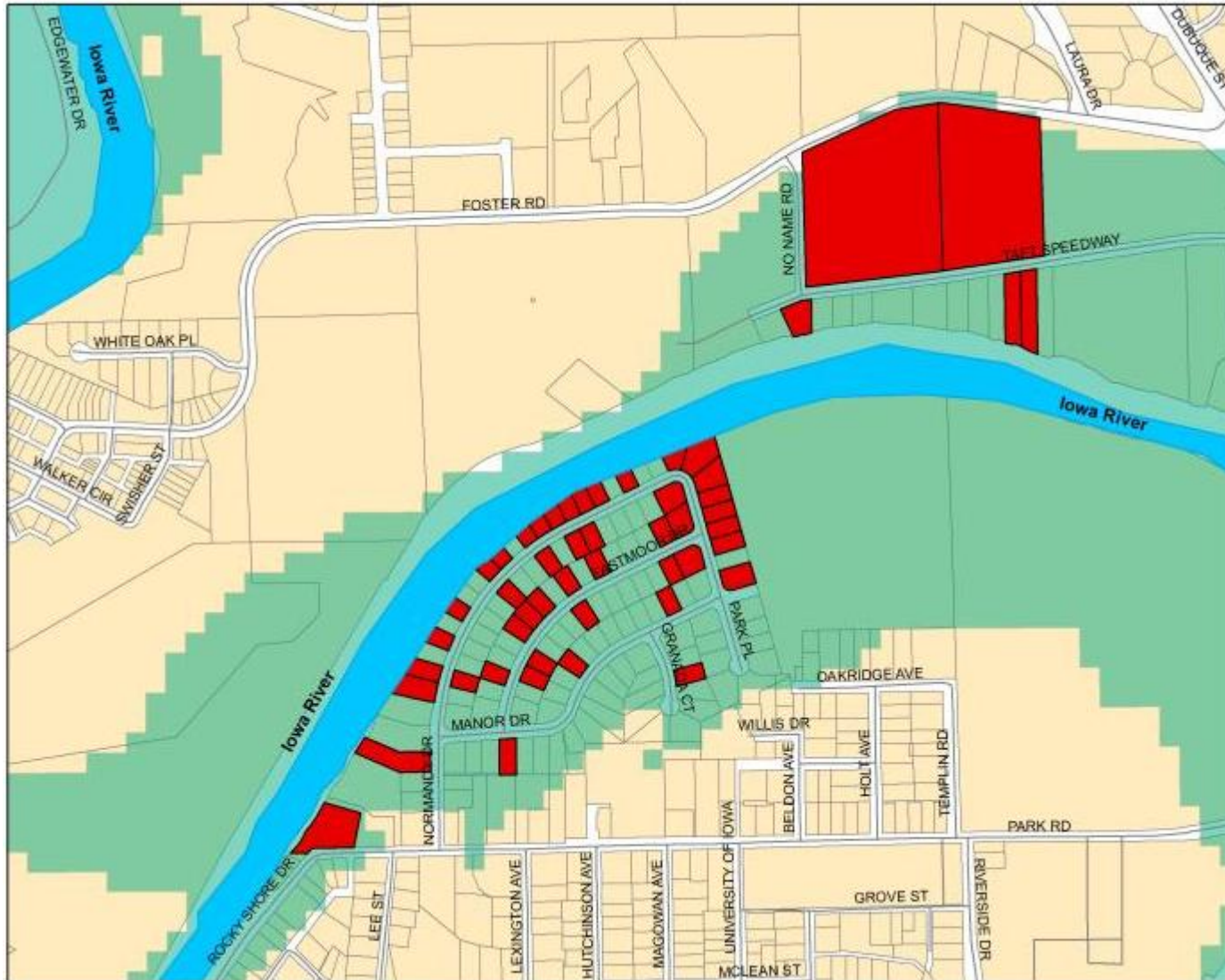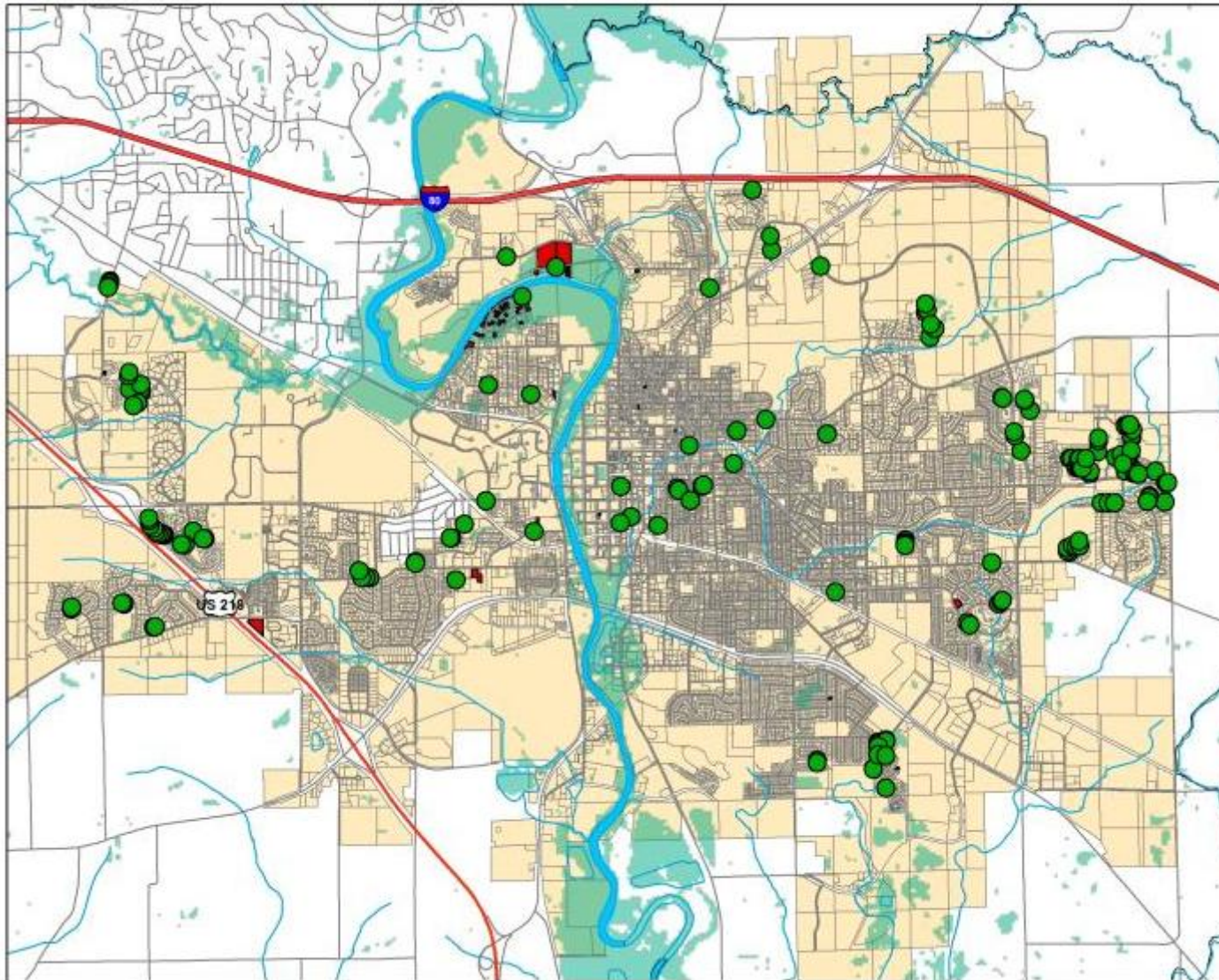
Iowa City: **Flood Extent with Parcels**

Iowa City: **Parcels where 50% or more dwelling value loss between 2008-2010**
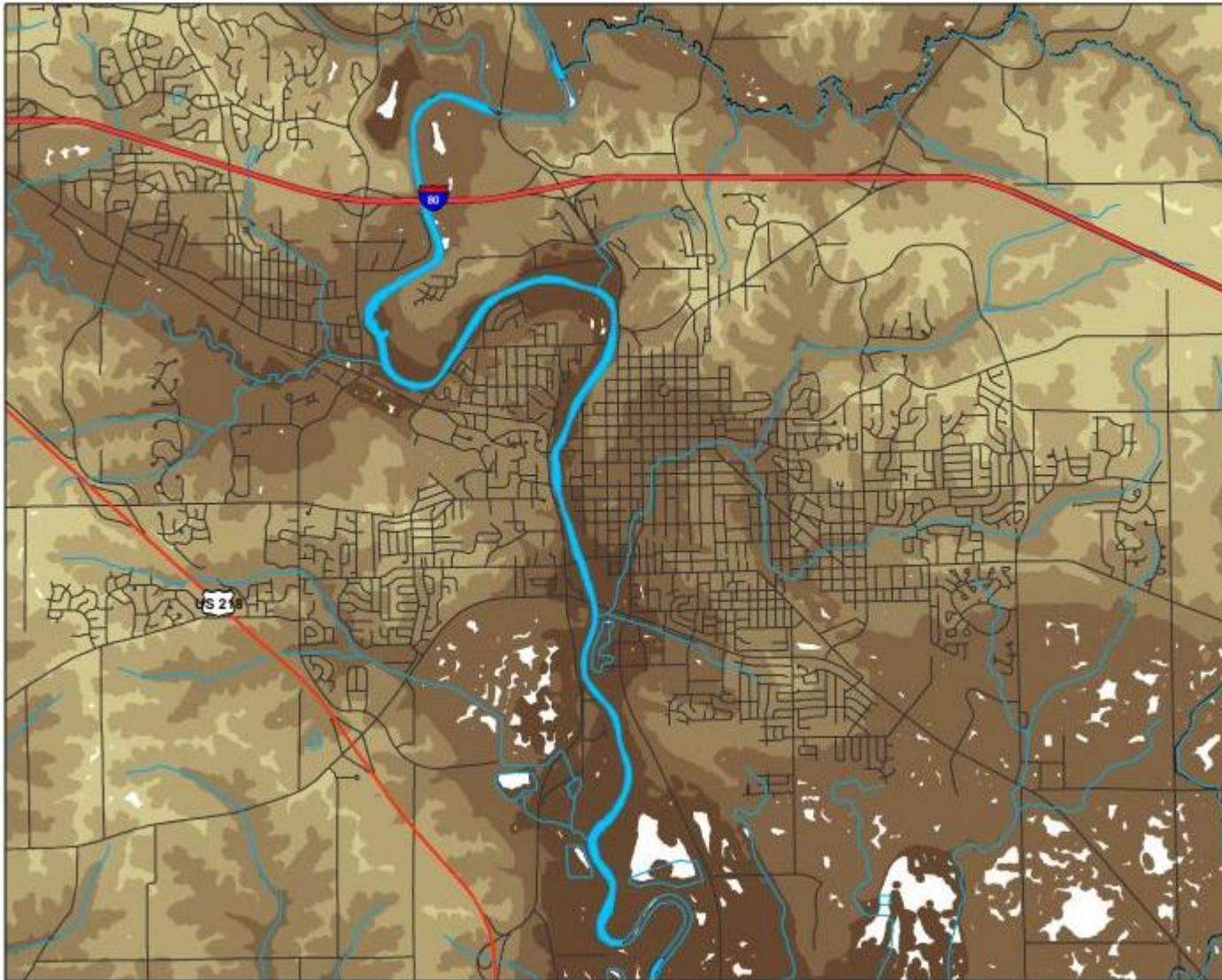
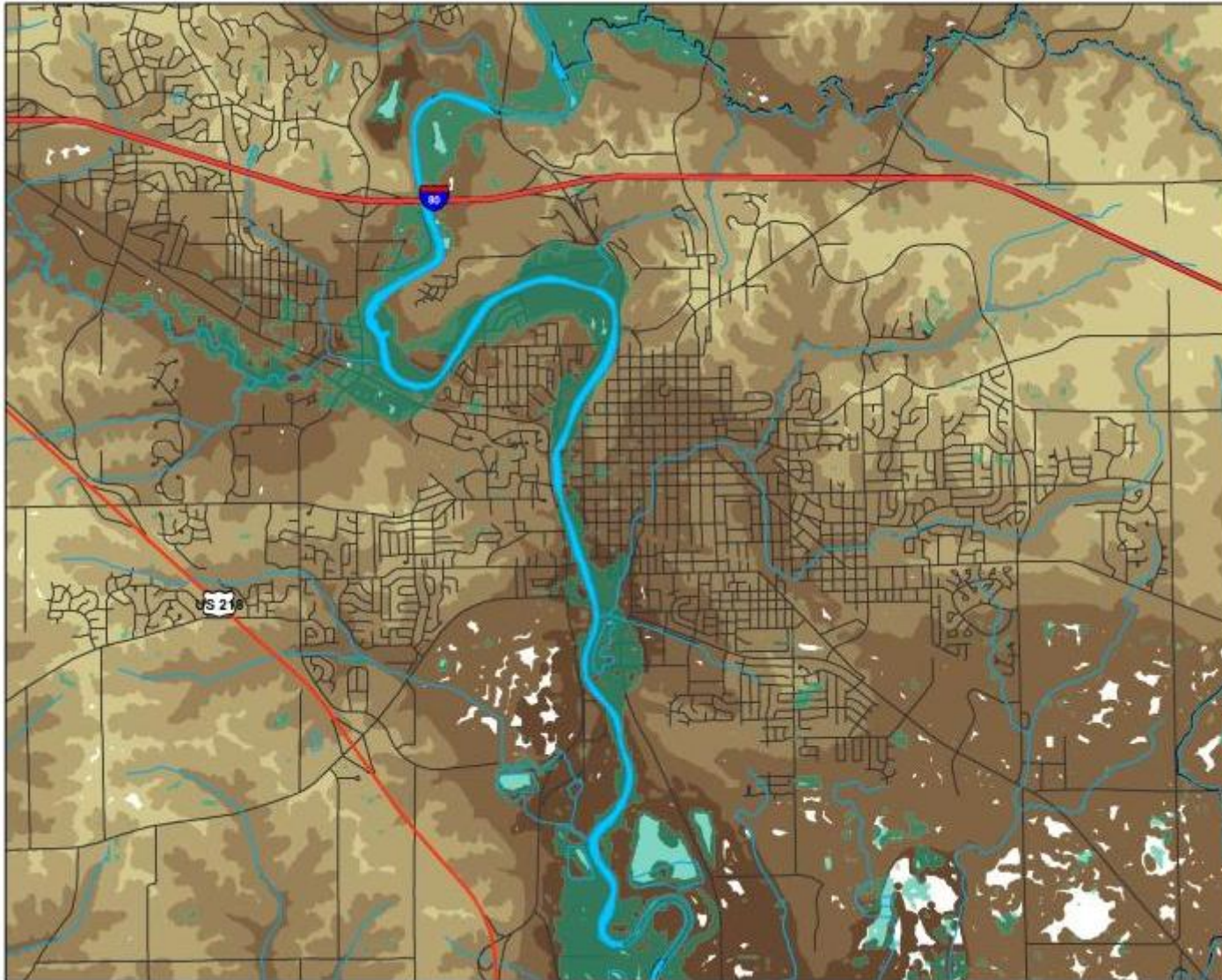# Iowa City: **Parcels where 50% or more dwelling value loss between 2008-2010**
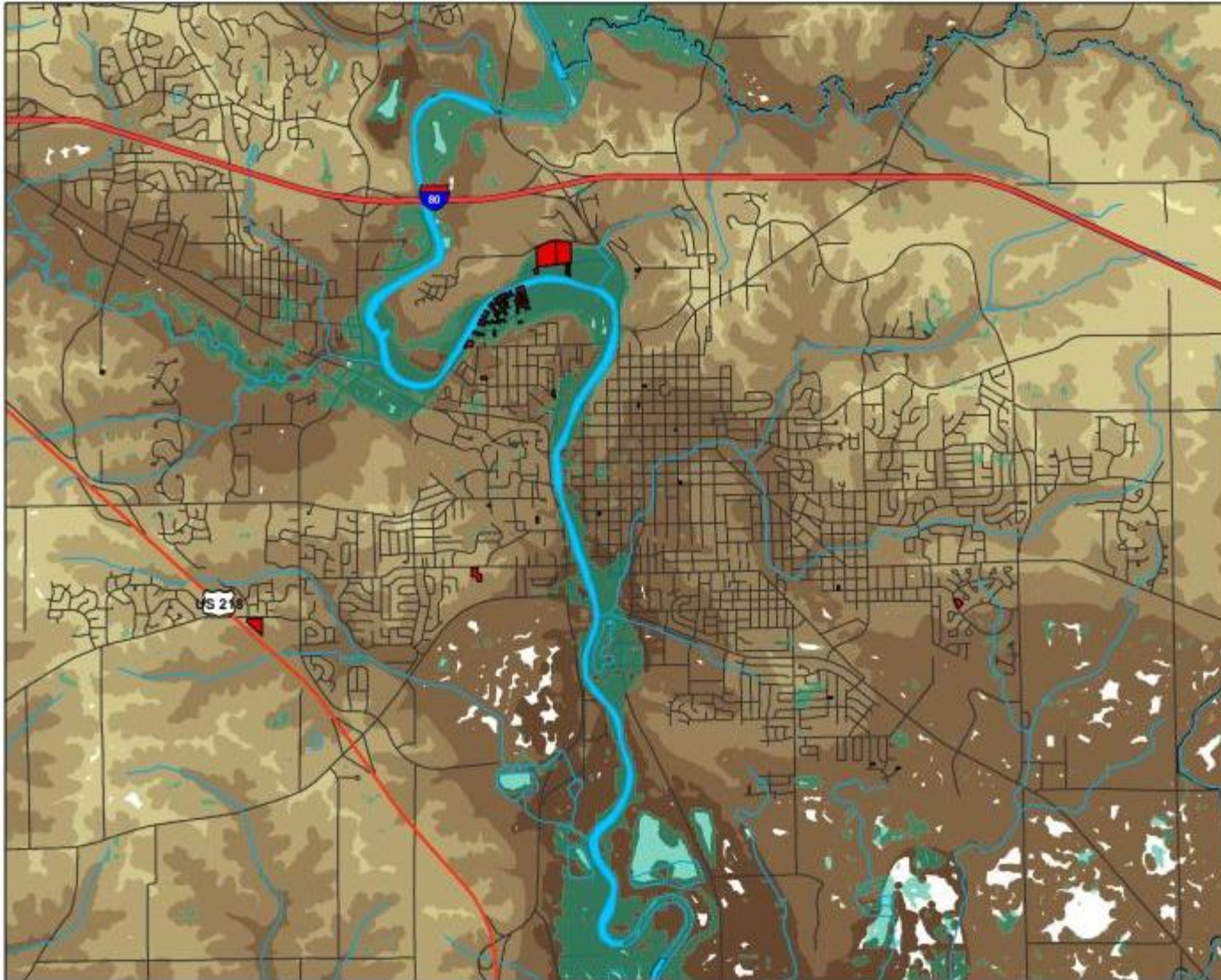
Iowa City: **New Housing Permits Since 2008**

Iowa City: **Possible Recovery and Policy Guidance, contours**
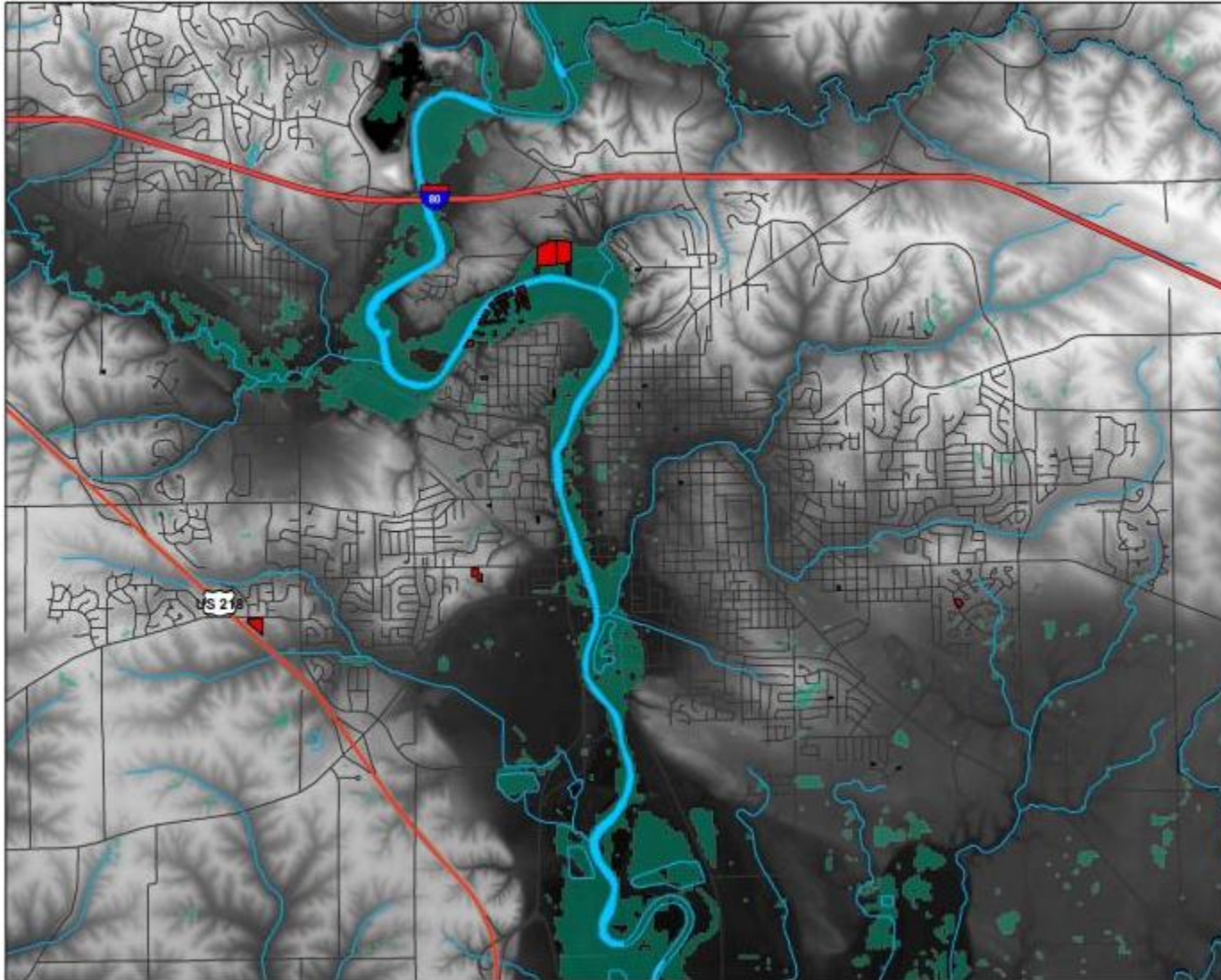
Iowa City: **Possible Recovery and Policy Guidance, contours & flood extent**

Iowa City: **Possible Recovery and Policy Guidance, Flood plain & losses**

Iowa City: **Possible Recovery and Policy Guidance, LiDAR & losses**

Iowa City: **Possible Recovery and Policy Guidance, LiDAR & losses**

Iowa City: **Possible Recovery and Policy Guidance, Flood plain-new builds**

Primary Issues

- Bureaucratic mazes and hoops

- Failure to communicate
  - Partial data sets
  - Incomplete data sets
  - Wrong data

- Inconsistent formats
  - Paper or Word copies
  - Inconsistent data formats including, but not limited to:
    - proprietary data,
    - archaic (ancient),
    - rarely used formats,
    - gov't agencies that do not have access to their own data
  - No common identifiers

- Legal roadblocks

Correcting the Issues

- Education & awareness at the community level

- Standard format for record-keeping

- Standard unit of records

- Standard method for record-keeping

- Timely (real-time) access to records and data

- Clearinghouse type entity for record and data stewardship

- Minimize or eliminate barriers among departments and different departments for data consistency and access

How Can This Be Used?

- Pre-Flood
  - Identifying properties, the area, most likely to be flooded. Delineate this area in GIS
  - Contact residents with information and resources

- Immediate flood response
  - Quickly map flood extent to identify affected properties using:
    - immediately acquired aerial imagery and/or
    - acquire on foot/vehicle using GPS technology,
    - interfacing both of the above with real-time GIS technology

- Post-Flood
  - Analyzing monetary losses
    - Property values
    - Tax base
    - Properties lost versus new construction
  - Useful for post-flood budgeting and cost/benefit analysis